

## REMARKS

This is in response to the Office Action dated March 11, 2003. Claims 1-3, 5-6, 8-13 and 15 have been amended as above, Claims 4, 7 and 14 have been canceled without prejudice or disclaimer, and Claim 16 has been respectfully submitted as above. It is respectfully submitted that as amended all pending claims are allowable.

### Rejection Under 35 U.S.C. 112, first paragraph

Claims 1, 8 and 15 have been amended as above to overcome the rejection under 35 U.S.C. 112, first paragraph.

### Rejection Under 35 U.S.C. 103(a)

*Claims 1-2, 6-9, and 13-15 were rejected under 35 U.S.C. 103(b) as being unpatentable over Karstensen et al. (US patent No: 5,923,451) in view of Davidson (US patent No: 6,160,653).*

The Applicant respectfully traverses such rejection because the reference Davidson (US patent No:6,160,653) cited in the Office Action is not a valid prior art. This reference, Davidson was not described in a printed publication or patented until December 12, 2000, which was more than six months after the filing date (April 7, 2000) of the current application.

As understood, Karstensen et al. discloses a bus formed by transmission channels (31) to bring electronic devices into communication with each other (col. 1, lines 44-46). Karstensen et al. further discloses the **optical** transmission **channels** being **in the form of optical waveguide** to achieve maximally packing density (col. 1, lines 56-58). Fig. 1 shows that the means for connecting devices 1 consists of a number of optoelectronic terminal installations 2 provided from a base element 10, and provided for the respective connection of one of the electronic devices 1

(col. 4, line 66 to col. 5, line 6). As shown in Fig. 5, each of the electronic device 1 has a transmitter 4 and a plurality of receivers 5 (col. 5, lines 12-24). The transmitter 4 is operative to transmit an output 22 to the detectors 323 of the termination installation 2, and the receivers 5 are operative to receive inputs 23 from the transmitter 322 of the termination installation 2 (Fig. 5, col. 8, lines 31-36 and lines 52-57). Therefore, as understood, the signal generated by the transmitted 4 of one electronic device 1 is received by the detector(s)/receiver(s) 5 of another electronic device(s) 1 via the optical channels 31 and the termination installation 2. Karstensen et al. further discloses the transmitter 4 as a semiconductor laser (col. 11, lines 33-35).

Therefore, regarding Claim 1, Karstensen et al. only teaches the transmitter 4 as a semiconductor laser, but fails to teach the circuit card having a LED. Further, Karstensen specifically teaches the signal generated by the transmitter 4 is received by the receiver 5 of other electronic devices **via the optical channels 31 in the form of optical waveguides and the termination installations 2**. The signal transmitted between the transmitter and the receiver as disclosed by Karstensen et al. is thus transmitted through hard wire, that is, the channels 31 and the terminal installations 2. Therefore, Karstensen et al. teaches away the photodiode being operative to receive the signal generated by the LED **through the optical pathway formed solely through air**.

In addition to the above, the Examiner indicates that Karstensen et al. differs from the current application in that Karstensen does not specifically disclose the interconnected circuit cards are within a computer system.

Regarding Claims 2 and 9, the Examiner stated that "*Karstensen discloses optically*

*transmitted infrared radiation (col. 6, lines 6-8)*”. What col. 6, lines 6-8 has disclosed is “Each device 1 comprises one optical transmitter 4 per transmission channel 31, which transmitter transmits optical signals on this channel 31, and one optical receiver 5, which receives optical signals from this channel 31”. The Applicant cannot find any teaching suggesting or disclosing optically transmitted infrared radiation as indicated by the Examiner. Karstensen et al. further teaches the transmitter 4 and the transmitter 322 being semiconductor laser, which is apparently more costly compared to LED, and requires much more power for generating the optical signal. Without teaching the infrared radiation transmission, the advantages and characteristics of such as low-cost, high-speed, short range, line of sight, point-to-point cordless data transfer cannot be achieved.

Regarding Claims 6 and 13, Karstensen et al. discloses when one electronic device 1 transmits on one or all channels 31, one or a plurality of other electronic devices 1 may listen via the channels 31. The Applicant cannot find any teaching from Karstensen disclosing the circuit cards being operative to run an embedded application apart from the transmitting and receiving functions of the electronic devices 1 via the channels 31.

Regarding Claim 8, similarly to Claim 1, Karstensen et al., though teaches the electronic devices each having a transmitter 4 and a plurality of receivers 5, fails to specifically teach providing the circuit cards each having a LED and a photodiode. Further, Karstensen et al. teaches away “to establish an optical pathway **solely through air** between the LED diode of each circuit card and the photodiode of the corresponding circuit card” by specifically teaching the optical transmission channels 31 in the form of optical waveguides, and inputting and outputting to and

from the electronic devices 1 via the installation terminals 2.

Regarding Claim 15, again, Karstensen et al. fails to teach the LED diode and the photodiode. Karstensen et al. also fails to teach the infrared signals transmitted between the LED diodes and the photodiodes.

*Claims 3-4 and 10-11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Karstensen et al. (US patent No: 5,293,451) in view of Davidson (US patent No: 6,160,653) and in further view of Croft et al. (US Patent No: 5,864,708).*

Firstly, the rejection over Claims 3-4 and 10-11 is respectfully traversed because the cited reference Davidson (US patent No: 6,160,653) is not a valid prior art because this cited reference is described in a printed publication or patented before the invention as claimed.

Further, by failing to explicitly or implicitly teach the circuit cards having LED and photodiode, Karstensen et al. and Croft et al., in combination or individually, further fails to teach the optically transmitted infrared radiation generated by the LED, and the standardized infrared communications scheme.

#### Newly Added Claim

In Claim 16, the computer system includes a digital camera or a hand held data collection device. Neither Karstensen et al. nor Croft et al. has disclosed the digital camera or the hand held data collection as claimed.

The rejections over 35 U.S.C. 102(b) and 103(a) are respectfully traversed and a notice of Allowance is thus respectfully solicited. Should the Examiner have any suggestions for expediting

allowance of the application, please contact applicant's representative at the telephone number listed below

Respectfully submitted,

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